Organothrips Bianchii, a New Hawaiian Thrips from Taro

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(Presented by Mr. Bianchi at the meeting of September 7, 1939)

The new genus and species of Thysanoptera described in this paper was recognized as new by its discoverer, Mr. Fred A. Bianchi. It is conspicuously colored and bizarre in structure—the sort of insect that the taxonomic entomologist welcomes because of its distinctness.

Genus **Organothrips,** nov.

(ὄργανον, an implement or instrument; θρίψ, a wood-worm—in allusion to the highly specialized spur on the fore tibiae.)

Body moderately slender and depressed, without heavy sculpture. Head about as long as wide, conspicuously produced between eyes and base of antennae, lobed posteriorly, broadest across eyes, and with the antennae widely separated. Eyes coarsely facetted and strongly protruding. Ocelli relatively posterior in position, not elevated. Antennae eight-segmented, terminating in a two-segmented stylus; intermediate segments nearly cylindrical, not swollen subapically and little narrowed at base, their sense-cones short and simple, their setae minute. Mouth-cone short and broadly rounded apically, the labium surpassing tip of labrum; maxillary palpi two-segmented. Prothorax with two long setae at posterior angles, only. Legs slender, the fore pair longer than usual and with their femora especially slender; fore tibiae somewhat broadened distally and armed at inner distal angle with a long trifid spur whose middle element terminates in a delicate comb. Wings of both pairs strongly recurved apically, the fore pair with the two usual longitudinal veins not closely set with setae. Abdomen moderately slender, about as wide as pterothorax in female, and only slightly narrowed at base; terga and sterna mostly with a comb on posterior margin laterally, the more distal terga with the comb complete; male with the abdominal glandular areas multiple.

Type: *Organothrips bianchii,* sp. nov.

The affinities of this very distinct genus are not clear, though it is evidently a primitive member of the Thripidae, with several adaptive structures peculiarly its own. The produced head, moniliform antennae, fore tibial spur, and two-segmented maxillary palpi are all noteworthy characters.

Organothrips bianchii, sp. nov. (The Taro Thrips)
(Pl. XXIV, figs. a–e)

Female (macropterous).—Length about 1.3 mm. (fully distended, 1.6 mm.). Color brownish gray, head darkest, abdomen with a conspicuous whitish yellow band occupying segments four and five and bright yellow in the last two segments, the sixth and seventh yellowish laterally at base; coxae and femora brownish gray and about concolorous with body, the tibiae, tarsi, trochanters, and base of femora yellow, the fore femora yellow also at apex; antennae with

first segment brownish gray but somewhat paler than head, the remaining segments pale yellow with a light grayish cast, the last one with distal half brown; fore wings brownish gray, with basal fourth (excepting vannus) and an equally wide cross-band near tip, almost white, the subapical pale band overlying that of abdomen; ocellar pigmentation red. Head, thorax, abdomen, legs, and antennae minutely granulate throughout.

Head (Pl. XXIV, fig. a) slightly longer than its greatest width, which is across eyes, the width across the parallel cheeks scarcely 0.9 as great; front conspicuously produced between eyes and base of antennae, the lateral length of this cephalic process about 20 μ, the distance between eyes and frontal costa about 40 μ, its greatest width (at base of antennae) about 96 μ; frontal costa relatively broad (23 μ) and slightly concave; dorsum of head with a few widely-spaced anastomosing lines on occiput; interocellar setae much longer and stronger than others on head, usually 22–27 μ long and about 46 μ apart, arising on a line with median ocellus; one pair of minute setae near inner anterior angle of eyes, another minute pair behind posterior ocelli and about on the same transverse line as two or three similar postocular pairs, a longer and stouter latero-ventral pair at posterior angle of eyes. Eyes coarsely facetted, strongly protruding, fully 0.4 as long as head, and about one-half as wide as their interval, measuring in μ as follows in one caustic-treated paratype: dorsal length 68, dorsal width 38, dorsal interval 75, ventral length 55, ventral width 32, ventral interval 86; dorsal facets small and separated. Ocelli posterior in position, the median one with its posterior margin negligibly in advance of middle of eyes, its diameter about 8 μ; posterior ocelli somewhat larger, usually 11 μ in diameter, about 36 μ apart, and 20 μ from median ocellus, much larger than the neighboring facets of eyes. Antennae (Pl. XXIV, fig. c) slender, with the number and arrangement of the short sense-cones and setae as illustrated. Mouth-cone extending about 75 μ beyond posterior dorsal margin of head; first segment of maxillary palpi (Pl. XXIV, fig. b) about 9 μ long, second about 26 μ.

Prothorax (Pl. XXIV, fig. a) about equal in length to head and broadest posteriorly, where it is about 1.3 times as wide as median length of pronotum, the latter with anterior margin straight, lateral margins nearly straight but slightly concave at middle, posterior margin distinctly emarginate; setae at posterior angles brownish yellow, the outer pair about 29 μ long, inner about 74 μ, all other setae minute. Fore legs longer than usual, their femora especially slender, their tibiae somewhat broadened distally and bearing a trifid spur (Pl. XXIV, fig. d) on inner surface at apex, the middle element of this spur stout and terminating in a comb of about 8 regular teeth. Fore wings (Pl. XXIV, fig. e) strongly sabre-shaped, with undulated fringing hairs; anterior vein usually with 2+2+1 small setae in basal four-tenths and 1+1 in apical fifth; posterior vein with 4–7 setae.

Abdomen equal in width to, or even narrower than, pterothorax, and little narrowed at base; posterior margin of terga I–V and sterna II–VII with a lateral comb of microtrichia, terga VI–VIII (sometimes V–VIII) with comb complete; dorsal surface with light anastomosing lines of sculpture on all seg-

Explanation of Plate XXIV

Organothrips bianchii, gen. et sp. nov.

Fig. a.—Head and prothorax, ♀, holotype; all antennal setae, and most of those on legs, omitted; apodemes are dotted.

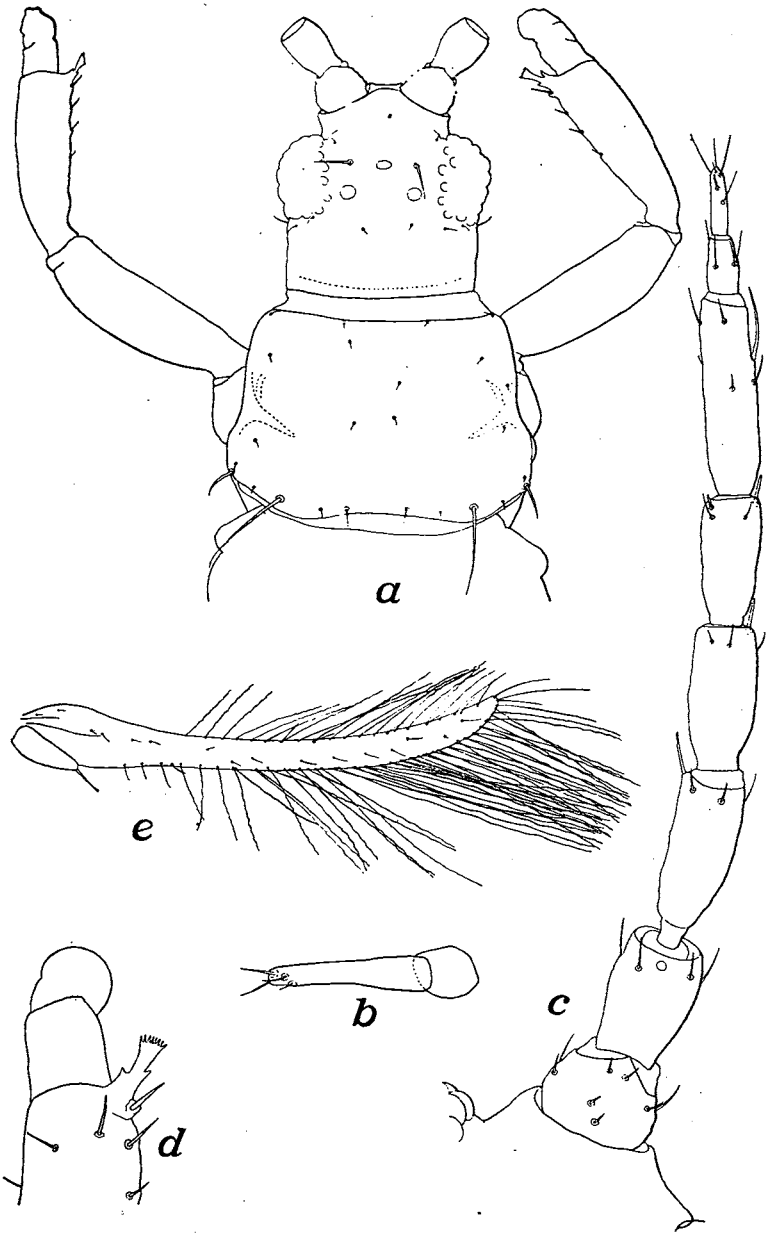
Fig. b.—Left maxillary palpus, ♀, paratype.

Fig. c.—Left antenna, ♀, paratype.

Fig. d.—Left fore tarsus and tip of tibia, ♀, paratype; tarsal setae not shown.

Fig. e.—Right fore wing, ♀, paratype.

(Drawn by the author)


a
e
b
c
d

ments, those on latero-basal part of I (only) prolonged into slight microtrichia; distal setae slender, yellow, segment IX with seta I approximately 93 μ, II 128 μ, III 154 μ; X with seta I about 147 μ, II 127 μ; ovipositor of holotype 217 μ.

Measurements of female (holotype[1]), in mm.: Length about 1.26, slightly distended 1.46; head, total length 0.157 (0.161), width across eyes 0.152 (0.151), greatest width across cheeks 0.133 (0.136); prothorax, median length of pronotum 0.157 (0.144), greatest width 0.204 (0.197); mesothorax, greatest width 0.263; fore wings, length 0.652, width at middle 0.036; abdomen, greatest width (at segment III) 0.263.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ):	28	44	60	44	43	63	19	24
Width (μ):	38	29	23	23	20	20	11	7

Total length of antenna, 0.325 mm.

Male (apterous).—Length about 1.1 mm. (fully distended, 1.4 mm.). Color uniform yellow, with distal half of last antennal segment brownish. Structure essentially as in female; head of the same general form, but with the eyes smaller and less protruding, and the ocelli wanting; prothorax larger; fore legs as in female, the femora not swollen; abdomen much narrower than pterothorax, tergum I without microtrichia arising from the latero-basal lines of sculpture, I–VIII with a dorso-lateral comb of microtrichia along posterior margin (as in female), but with the median portion of II–VIII prolonged into irregular lobes or teeth which form a complete irregular comb on V–VIII; sterna II–VII with an irregular, often interrupted, comb on posterior margin; sterna III–VII with a transverse arcuate row of 2–4 small, usually circular, glandular areas spanning median third behind middle; tergum IX with posterior margin shallowly emarginate, at middle with a pair of long (80 μ), slenderly pointed, stout setae which are about 40 μ apart and nearly 7 μ in diameter at base, and with three pairs of smaller setae behind the larger ones, the first and third pairs of these lying nearly on a transverse line, the second pair somewhat longer (29 μ) than the others and arising posterior to them, the large lateral setae on this segment about 97 μ, the ventro-laterals about 90 μ.

Measurements of male (allotype[2]), in mm.: Length about 1.05, slightly distended 1.19; head, total length 0.137 (0.136), width across eyes 0.131 (0.126), greatest width across cheeks 0.123, length in front of eyes 0.040, lateral length of cephalic process 0.021, its greatest width 0.091; eyes, dorsal length (0.048), dorsal width (0.027), dorsal interval (0.073); interocellar setae, length 0.026 (0.025), interval 0.049 (0.046); mouth-cone, length beyond posterior dorsal margin of head 0.083; prothorax, median length of pronotum 0.161, greatest width 0.214, outer seta at posterior angles 0.045, inner seta 0.076; mesothorax, greatest width 0.237; abdomen, greatest width 0.214.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ):	27	40	55	40	37	56	17	20
Width (μ):	39	27	21	20	20	20	11	6

Total length of antenna, 0.292 mm.

HAWAII: Kailua, Oahu, March 29 and July 6, 1939, 54 ♀♀ and 11 ♂♂, taken by Mr. Fred A. Bianchi on Taro (*Colocasia antiquorum* var. *esculenta*). Holotype and allotype in the author's collection.

[1] Supplementary measurements of a caustic-treated paratype are given in parentheses.

[2] Supplementary measurements of a caustic-treated paratype are given in parentheses.

The following important and interesting information on the species is taken from notes furnished by Mr. Bianchi: "The host-plant of this thrips is the common edible taro, from which Hawaiians have immemoriably manufactured *poi,* an important article of their diet. The plant is grown either in water, like rice, or in rich, moist soil, and consists of a cluster of heart-shaped leaves attached to long fleshy stems. These stems are partially submerged in 'wet taro,' and the inner surface of the outer ones, from the water line to three or four inches above water, is the only part of the plant where thrips are to be found. In 'dry taro' (not standing in water), or even in taro growing in mud only recently covered by water, I have found no thrips at all.

"The eggs and young are quite abundant on the same part of the plant that harbors the adults. The young, as well as the adults, are sluggish and often covered with a sort of slime which collects at the base of the taro stems. The eggs are laid just under the epidermis of the plant in the usual terebrantian manner.

"I have ascertained that the species is well distributed on this island, but I do not know yet whether it is to be found on other members of the archipelago.[3] I am sure that it is, however, and on many other islands of the Pacific, as well, for taro has been traveling far and often for a long time."

[3] Later found by Mr. Bianchi on taro at Kohala, Hawaii, August 27, 1939.